Notice of Allowability	Application No.	Applicant(s)
	09/069,088	LIANG, SHENG
	Examiner	Art Unit
	VAN H. NGUYEN	2194

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to <u>Applicant's arguments filed 3/29/05</u>.

2. ☒ The allowed claim(s) is/are <u>1-6, 8-14, 16-22, and 24-33 (now renumbered as 1-30)</u>.

3. ☒ The drawings filed on <u>15 August 2003</u> are accepted by the Examiner.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the

            International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of

        Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)

6. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☐ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

ST. JOHN COURTENAY III
PRIMARY EXAMINER

Examiner's Amendment

I.   An examiner's amendment to the record appears below. Should the changes and/or

additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR

1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the

payment of the issue fee.

II.   Authorization for this examiner's amendment was given in a telephone interview with

Mr. John M. Mulcahy (Reg. No. 55, 940) on April 28, 2005.

III.   **The application has been amended as follows:**

A.   **All previous copies of claims 13, 17-22, 24, and 30-33 have been replaced with the**

following clean copy of claims 13, 17-22, 24, and 30-33 as amended by the Examiner's

amendment:

13.   A time profiling system, comprising:

         a multi-threaded program; and

         a processor configured to periodically suspend execution of the multi-threaded program,

to retrieve register data corresponding to a selected thread, compute a value based on the register

data, compare the computed value with register information stored following a previous

suspension of the multi-threaded program, regard the selected thread as running if the computed

value is different from the previously stored register information, and provide an indication

corresponding to a portion of the program containing the selected thread.

17.   An article of manufacture containing instructions for performing operations, when

executed by a processor, for time profiling multiple threads of execution corresponding to a

program, by:

     periodically interrupting execution of all of the threads;

     determining whether register data corresponding to a selected thread has changed from a

previous interrupt of all of the threads; and

     providing an indication of the change for the selected thread.

18.   The article manufacture of claim 17, wherein the determining step includes accessing

stored data corresponding to the selected thread; and comparing the stored data with register

information stored following a previous interrupt.

19.   The article of manufacture of claim 18, wherein the comparing step includes computing a

value corresponding to the stored data; and determining a relationship between the computed

value and the previously stored register information.

20.   The article of manufacture of claim 19, wherein the step of providing an indication of the

change for the selected thread includes updating a profile to reflect that the selected thread is

running when it is determined that the computed value and the previously stored register

information do not match.

21.   An article of manufacture containing instructions for performing operations, when

executed by a processor, for determining whether a selected thread of execution of a

multi-threaded program is running, by:

     suspending execution of the multi-threaded program;

     retrieving register data corresponding to the selected thread;

     computing a value based on the register data;

     comparing the computed value with register information stored following a previous

suspension of the multi-threaded program;

     regarding the selected thread as running if the computed value is different from the

previously stored register information; and

     providing an indication corresponding to a portion of the program containing the selected

thread.

22.   The article of manufacture of claim 21, wherein the regarding step includes updating the

previous register information based on the computed value.

24.   An article of manufacture containing instructions for performing operations, when

executed by a processor, for time profiling multiple threads of execution corresponding to a

program, by:

     periodically suspending execution of the program;

determining whether information corresponding to processor registers for each thread

indicates that the thread is running by comparing the information to stored information from a

previous interrupt; and

recording time-profiling information for each running thread.

30.   The article of manufacture of claim 17, wherein the method further comprises: assigning a

cost indicator to an identified portion of the program that is active when it is determined that the

selected thread is running.

31.   The article of manufacture of claim 30, wherein the cost indicator reflects a number of

cycles the selected thread was running in the identified portion of the program.

32.   The article of manufacture of claim 21, wherein the indication reflects a number of cycles

the selected thread was running in a portion of the program that is active when it is determined

the selected thread is running.

33.   The article of manufacture of claim 24, wherein the time profiling information includes a

cost indicator that reflects a number of cycles the selected thread was running in the portion of

the program that is active when it is determined the selected thread is running.

B.   Claim 15 has been cancelled.

IV.   °Any inquiry concerning this communication or earlier communications from the examiner should be directed to VAN H. NGUYEN whose telephone number is (571) 272-3765. The examiner can normally be reached on Monday-Thursday from 8:30AM - 6:00PM. The examiner can also be reached on alternative Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).
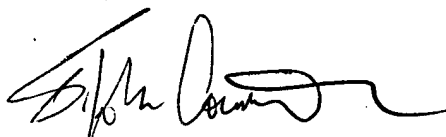
Any response to this action should be mailed to:
Commissioner for patents
P O Box 1450
Alexandria, VA 22313-1450

VHN

ST. JOHN COURTENAY III
PRIMARY EXAMINER